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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,238	10/17/2001	Dale K. Bell	60,130-1197/01MRA0362	5578
26096	7590	10/01/2003	EXAMINER	
CARLSON, GASKEY & OLDS, P.C.			SMITH, JULIE KNECHT	
400 WEST MAPLE ROAD			ART UNIT	
SUITE 350			PAPER NUMBER	
BIRMINGHAM, MI 48009			3682	

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,238

Applicant(s)

BELL, DALE K.

Examiner

Julie K Smith

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Butkovich et al. (5,099,635).

Regarding claims 1-3, 6 and 10-12, Butkovich et al. discloses a drive axle assembly (see fig. 3) comprising an axle housing (52), an axle shaft (114) supported at least partially within said axle housing, a driven shaft (94, 112), having a yoke at one end, supported at least partially within said housing transverse to said axle shafts, a gear assembly (134, 132) disposed within said housing coupling said axle and driven shafts, a bearing assembly (96, 98) supporting said driven shaft in said housing, a first seal (70) interposed between said driven shaft and a pinion bearing cage adjacent to said yoke (102) and a second seal (126) interposed between said driven shaft and said bearing cage adjacent said pinion (see fig. 3), said seals separating said housing into first and second cavities (64, 58) with said bearing assembly and said gear assembly respectively disposed therein, a first lubricant in said first cavity lubricating said bearing assembly and a second lubricant different than said first lubricant in said second cavity lubricating said gear assembly (see col. 8, lines 14-23).

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Regarding claims 4-5, Butkovich et al. discloses a bearing cage that is a through shaft bearing cage or an input bearing cage.

Regarding claim 9, Butkovich et al. discloses coaxial axle shafts (114, 130) wherein said gear assembly includes a differential (116) connecting said axle shafts and said driven shaft to permit relative rotation between said axle shafts.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butkovich et al. as applied to claims 1-6 and 9-12 above, and further in view of Fox (5,203,391).

Regarding claims 7 and 13, Butkovich et al. discloses an axle assembly, as claimed, but does not disclose the bearing assembly as claimed. However, Fox teaches a bearing assembly including a cup (6) affixed to a cage (4) and a cone (52) affixed to a shaft (2) with rolling elements (56) arranged in a retainer between said cup and said cone, and a seal (36, 136) interposed between said cage and cone.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the bearing assembly of Butkovich et al. with the bearing assembly of Fox so as to provide a more effective sealing means, thus preventing lubricant from

leaking out of one chamber and into another chamber which may cause damage to the bearing assembly.

Regarding claim 14, Fox further teaches seals on both sides of a bearing assembly. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide another seal between the bearing assembly and the gear assembly so as to provide protection from moisture leaking into the bearing assembly. Moreover, it is old and well known in the art to provide bearings with seals placed between the cage and cone.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Butkovich et al. as applied to claims 1-6 and 9-12 above, and further in view of Tersigni et al. (5,763,372). Butkovich et al. discloses an axle assembly but is silent as to the lubricant used in the assembly. However, Tersigni et al. teaches a GL-5 gear lubricant additive used in transmission applications (see col. 14, lines 59-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the lubricant of Butkovich et al. with the lubricant as taught by Tersigni et al. so as to increase efficiency, reduce friction and reduce corrosion of the axle assembly.

Response to Arguments

6. Applicant's arguments filed 7/24/03, with respect to the 112 1st paragraph rejection of claims 7 and 13 have been fully considered and are persuasive. The 112 1st rejection of claims 7 and 13 has been withdrawn.

7. Applicant's arguments filed 7/24/03 regarding claims 1-14 have been fully considered but they are not persuasive.

Regarding claims 1 and 14, Butkovich clearly shows a bearing assembly (96,98) in one cavity (64) and gear arrangement (134,132) in a separate cavity (58) being positioned on opposite sides of a seal assembly (70), as claimed.

Regarding claims 3-5, the bearing cage shown in figure 3 is used to support a pinion, while also supporting and shaft that can be considered a through shaft or an input shaft. Moreover, the Applicant shows one bearing cage in a single figure (Figure 3) as being three different types of bearing cages.

Regarding claim 11, the Applicant argues that Butkovich does not disclose a bearing cage supporting two seals, however, claim 11 does not claim a bearing cage supporting two seals. Butkovich discloses a seal (70) adjacent to a yoke (102) and a seal (126) adjacent to a pinion (134).

8. In response to applicant's argument that Fox is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, providing a seal between the cage and cone of a bearing prevents the bearing from leaking, as taught by Fox in column 6, lines 46-62.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie K Smith whose telephone number is 703-305-3948. The examiner can normally be reached on Monday-Friday, 8-5:30, (Every other Friday off).

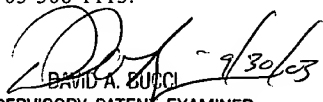
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

JKS

Jks

September 29, 2003


DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600